

REMARKS/ARGUMENTS

Claims 1-28 are pending with Claims 17-26 being withdrawn from consideration by the Office.

Claim 1 has been amended to correct a simply typographical error. Claim 9 has been amended to provide proper antecedent basis to Claim 1.

No new matter or issues are believed to be raised by this amendment that would preclude its entry into the record at this after final stage of prosecution. At minimum, Applicants request that the amendment be entered for the purposes of appeal, as it simplifies issues that would be appealed, e.g., obviates the issues raised under 35 USC 112, first and second paragraphs and the objection noted on page 2 of the Official Action.

As to the term "solid" in the claims, it is not clear how this can be indefinite. Solid means something solid, not perforated, not liquid, not semi solid. Therefore, the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity as would be understood by someone in this field. Withdrawal of the rejection under 35 USC 112, second paragraph is requested.

As set forth in independent Claim 1, the invention is directed to a device, comprising:
a cup composed of solid walls, a base of which is oriented in the direction of the force of gravity and which base is flat, solid and comprised of a silicon substrate suitable for depositing polycrystalline silicone thereon, and an opening region of which is oriented in the opposite direction to the force of gravity, and wherein said cup is heatable directly or indirectly by a heating, temperature-measuring control unit, wherein an external diameter of the walls of said cup is less than or equal to a diameter of said base;

a substance-adding unit having a substance feedline and a metering unit, the substance-adding unit being oriented with a substance outlet in the direction of the force of

gravity and projecting into a free volume of said cup between said base and said opening region;

Applicants thank Examiner Lund for the courtesy of discussing the merits of the present application with their undersigned representative on September 19, 2006. As outlined in the Interview Summary, of record in this case, the undersigned explained that the invention claimed is fundamentally different than that of the prior art, e.g., as described in the Kordina patent. Specifically, it was explained that the orientation of the devices is opposite and, moreover, the feed inlets for the gas are positioned differently: Kordina's inlet (or conduit) introduces gas that flows upwards and is not positioned such that the substance outlet is in the direction of the force of gravity (i.e., downwards) as claimed. It was agreed that the claims requires a vertical alignment with the outlet facing downwards. It is believed that the Examiner would reconsider the rejections based on these differences.

As discussed on page 3 of the present specification:

Surprisingly, it has been found that a solid (B) can be produced in lump form with a relatively low production of silicon dust in a simple and particularly economic way by controlled thermal decomposition of a gaseous substance (A) if the decomposition and deposition of the substance (A) is carried out in a specific device.

This specific device mentioned in this paragraph, is the one that is claimed.

Moreover, this device is particularly advantageous for producing polycrystalline silicone (as the solid (B) in the paragraph above—see page 4, 1st paragraph of the specification) from silane gases, see also page 4, 2nd paragraph (reproduced below):

The present invention is particularly economical, since the outlay on equipment is relatively low, and when monosilane is used as substance (A) the only off-gas formed is hydrogen, possibly with small amounts of monosilane. In addition, a relatively low level of silicon dust is formed in the process. Due to the procedure and device according to the present invention,

there is generally no caking of solid (B) on the reactor wall (3). Furthermore, practically the only off-gas obtained is free hydrogen. The deposition rate of solid (B) is generally >97%. Furthermore, the dust content in the off-gas (C) after outlet (3.6) is generally very low. Also, the present process is particularly advantageous in energy terms, since, inter alia, relatively low substance flow rates can be used.

The devices described in the cited references are arranged in a manner that is different from that claimed. Moreover, those devices because they are designed and optimized for specific purposes other than the preparation of polycrystalline silicon as described in this application would not have been modified to yield the claimed device.

In the Official Action, the Examiner has withdrawn the previous prior art rejections but has raised new rejections based primarily on the newly cited U.S. patent no. 5,704,985 ("Kordina et al"). Specifically, Claims 1-4, 6, 7, 9-13, 15, 16 and 28 as being the same as the device described in Kordina et al and/or would have been obvious in view of this Kordina et al patent, alone or combined with several other publications.

However, as noted above during the meeting, the system in US '985 is directed to the production of SiC and the construction of the device is different from that being claimed. Notably, in the present claims the substance-adding unit being oriented with a substance outlet in the direction of the force of gravity and is unlike the device in Kordina in which gas flows up from the bottom to the top through the core of the device. Exemplary of these difference is shown by a side-by-side depiction of the device from Kordina and that of the present invention as shown in Figure 1 of the present application and Figure 1 of the Kordina patent:

Kordina

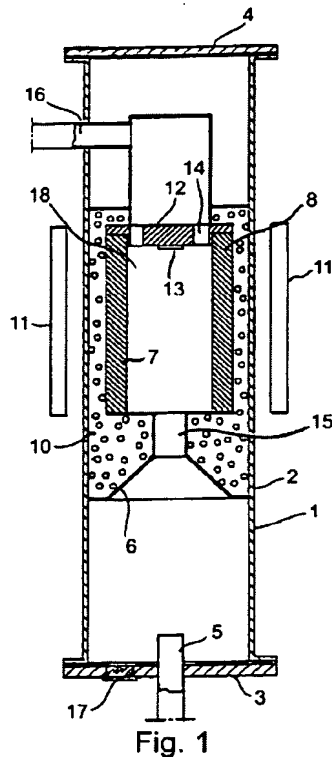


Fig. 1

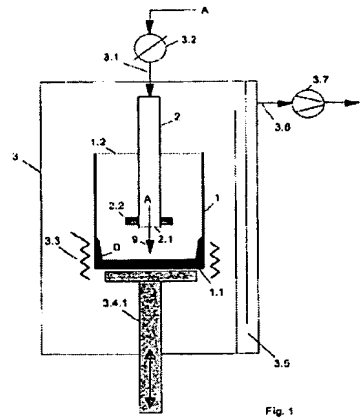


Fig. 1

present application

In the Kordina patent, the gas stream conduit (5) is at the lower end flange (see col. 4, line 66- col. 5, line 1) provides gas to flow upwards through a funnel (6) to concentrate) whereby gas flows around cylinder regions (7, 8), to SiC (13) which is the lower side of lide (12) and gas continues upward through gas outlet (14), also noting the end flange is noted as feature (4).

In the present invention, the substance adding unit (2) is oriented with the substance outlet (2.1) in the direction of the force of gravity (g) and projects into the free volume of the cup (1) between the base (1.1) and the opening region (1.2).

As the device of the invention is clearly different from that of Kordina, Applicants request that the rejection be withdrawn.

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As the secondary references relied upon in the rejections under 35 USC 103 using Kordina as the primary reference, do not describe or suggest modifying Kordina's disclosure in the manner that is claimed, Applicants also request that the rejections under 35 USC 103 be withdrawn.

The Goela patent is cited to reject Claim 5 as alleging teaching a gas conveying unit with a dust separator. The Padovani patent is cited to reject Claim 14 as alleging teaching a coating device with heating and cooling coils. However, Goela nor Padovani describe or suggest modifying Kordina in a manner that one would obtain the presently claimed device. Moreover, one would not do such a thing because it would be completely contrary to the explicit teachings of the Kordina patent.

US 6,001,175 ("Maruyama") describes an apparatus for crystal growth of, e.g., silicon wafers used in semiconductors, that is configured like a sheet to accommodate the stated need for larger diameter wafers (see col. 3, lines 6-21). In addition, the Examiner relies on the statement in col. 21, lines 58-64 as alleged basis to conclude that SiC is equivalent to silicon and therefore would have been obvious to use only silicon based on this disclosure. The disclosure in Marayama states: "Although initial heating can be generally performed by heat conduction from a heating material when a high-purity carbon susceptor coated with silicon carbide (SiC) or a low resistivity silicon substrate susceptor is used as the substrate wafer support 9, defects such as crystal plane slipping caused by heat distortion, etc. occurs easily in the substrate wafer."

Applicants respectfully disagree with the Examiner's conclusion on this basis because there is simply no motivation to substitute any of the materials from the Kordina et al patent with silicon as described in this patent publication. This is particularly true in light of the fact that Kordina et al requires SiC and it is improper to go directly against the explicit teachings

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of the prior art when raising an obviousness rejection. Moreover, there is nothing in the references which specifically suggest using high purity silicon in the Kordina et al devices because they are designed and optimized for specific purposes other than the preparation of polycrystalline silicon as described in this application.

Moreover, the disclosure in Maruyama does not permit one to go against the explicit teachings of the Kordina patent to make a device as claimed and as such there can be no issue of obviousness in this case. This applies equally to the rejections noted for Claims 5, 8 and 14 using the Kordina, Maruyama, Goela and Padovani patents.

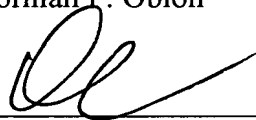
Withdrawal of all rejections under 35 USC 103(a) is requested.

A Notice of Allowance for all pending claims is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, he is encouraged to contact Applicants' undersigned representative.

Respectfully submitted,

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